

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 84-12191

Exam Date: 12/27/2013

1. Current Owner: JAMES B BOLIN
PO BOX 2322
OROFINO ID 83544
(208) 476-9264

And

CATHY L BOLIN
PO BOX 2322
OROFINO ID 83544
(208) 476-9264

2. Accompanied by: N/A (In-house exam)

Phone No:

Address:

Relationship to Permit Holder:

3. SOURCETRIBUTARY

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 84-4278
2. Other water rights with the same point of diversion: none

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NE1/4NW1/4 Sec. 24, Twp 36N, Rge 02E, B.M.

CLEARWATER County

Method of Determination: Air photo and topographic maps

2.

PLACE OF USE: STOCKWATER AND DOMESTIC

Twp Rge Sec	NE				NW				SW				SE				Totals
36N 02E 24	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
					X	X											
						L 1											

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
36N 02E 24	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
					2.5	2.5											
						L 1											5.0

Total Acres: 5

Method of Determination:

3. ☐ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☐ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☐ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☐ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
UNK	UNK	5?	UNK	UNNK	UNK

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
-----N/A-----						

2. Measurements: No measurements were taken, in-house exam

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Theoretical horsepower calculations.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 5 \times 3.5 = 16.5$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.10 \times 245 \times 1.9835 = 48.6$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 16.5$$

2. Volume Calculations for Other Uses: Standard recommendations for stock water and domestic volumes.

G. NARRATIVE/REMARKS/COMMENTS

Permit 84-12191 authorized the use of 0.16 cfs of ground water for domestic, stock water, and irrigation purposes. The proof of beneficial use form indicates the system provides water for use in one home, waters three horses and two cows, and the irrigation of five acres. The source of the water is a single ground water well.

Proof of beneficial use was filed on 02/16/2010.

To conduct the in-office field exam for this water right permit, the file was reviewed as well as aerial photographs. The taxlot information indicates the applicants are the current owners of the property. The 2011 air photos of the property show the portions of the property that appear to have been irrigated as well as a discussion with the water right holder (Cathy Bolin) on 12/27/2013.

Based on the IDWR water right database, it appears that there is an overlap with water right 84-4278. This right is a spring source water right and is owned by the neighbor and the place of use for this right crosses the taxlot boundary into the parcel owned by the applicants. It appears the POU for 84-4278 is erroneous and there is no actual overlap with this water right.

Information regarding the well was provided in the water right file. The depth, driller, and size of the pump in the well are provided in the well driller's report. The well was drilled in May, 2004, to a depth of 203 feet below land surface. The well was drilled as an 8-inch well, requiring an additional fee for the drilling of the well. Although the well was initially air tested at 10 gallons per minute, it is assumed that a large horsepower pump (5 Hp) has been installed in the well to provide the necessary water to meet the needs of this water right. The theoretical horsepower calculation spreadsheet is attached.

Based on the aerial photographs and correspondence with the permit holder, the place of use was determined. It appears that five acres have been developed for irrigation purposes, indicating the irrigation component of the permit has been put to beneficial use. The landscaped area surrounding the house and the pasture land that appears to have been irrigated were selected as the POU for the irrigation component. It appears five acres have been irrigated, and using 3.5 AF/acre a volume limit of 16.5 AFA is recommended.

The stock water use is assigned to the quarter-quarter sections identified in the water right permit. The beneficial use form indicates that three horses and two cows make up the stock that utilized the

water for this use of the permit. Using the recommended diversion rates and volumes, a rate of 0.02 cfs and a volume of 0.1 AFA (rounded up from 0.067 AFA) are recommended.

The domestic use is limited to the one house and shop. Using the recommended rates and volume limits, a rate of 0.04 cfs and a volume limit of 0.6 AFA (standard for one house, in home only use) are recommended.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	01/01 to 12/31	0.020 CFS	0.1 AF
IRRIGATION	03/15 to 11/15	0.100 CFS	16.5 AF
DOMESTIC	01/01 to 12/31	0.040 CFS	0.6 AF
<u>Totals:</u>		0.160 CFS	17.2 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Dennis Owsley

Date 12/27/2013

Reviewer Dennis A. Owsley

Date 1-3-14

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 84-12191
 Examiner: D. Owsley
 Date of Field Exam: 12/27/2013

	Option 1	Option 2	Option 3
P/D No.: D0033611			
PUMP HORSEPOWER	5	5	5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	80	100	120
DISCHARGE PRESSURE	40	40	40
FRICTION	0	0	0
RATE OF FLOW (cfs)	0.18	0.16	0.15
(gpm)	80.2	71.9	65.1

The above calculates the formula =
$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

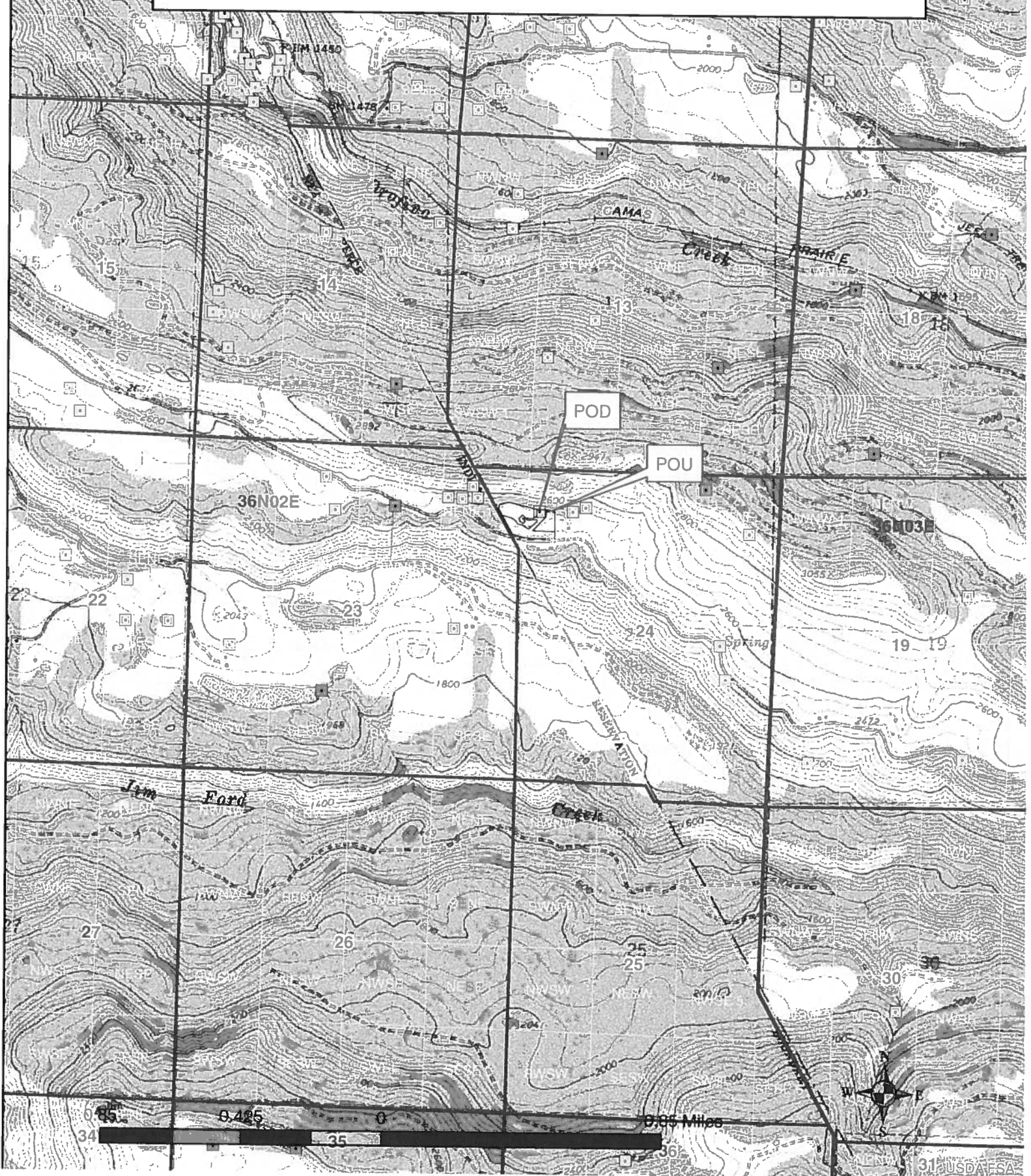
Assumptions: %70 efficiency.

Examiners Notes: Estimates of pump capabilities for POD. Assumed large capacity pump (5 Hp) considering size of of well (8 inch) and use for 5 acres of irrigaiton. 40 psi was selected based on the Theoretical well reference sheet in the Field Examiners Handbook, dated 4/25/2013. Pumping level was estimated, with three scenarios presented. It appears a 5 Hp pump would be able to produce the 0.16 cfs applied for.

Map showing locations of POU and POD for right 84-12191



Map showing locations of POU and POD for right 84-12191





Google earth

feet
meters | 100 500



Per discussion with permit holder on 12/27/2013, pastures 1, 2, & 3 are/have been irrigated. The lot surrounding the house is also irrigated (landscape).